

# Innovate but Reflect

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Technology is opening up new frontiers but it is also presenting new challenges that the world must confront. Ever more than before we need to exercise wisdom in emerging technologies— from designs to deployments.

Truth has always been difficult to seek. With fake news and deep fakes, there are too many confusing signals around facts which makes our role in information dissemination and processing ever so challenging. Much discernment would be needed to distinguish truth from opinions, preferences or even worst— lies.

Privacy has become more ephemeral and almost unaffordable. More sophisticated data mining and facial recognition tools may add to the convenience of consumer experiences but it is also posing active threats of surveillance and intrusion on personal data, such as health and finance. We are seeing more targeted attacks on activists and journalists. The paranoia is set to rise as Alexa and Siri constantly listen to our conversations. Think of it like George Orwell's 1984 - but at a much more intimate level.

Healthcare providers and insurance companies will have all your health history. It will not just be limited to yours but also of your future generations. Prices and policy will be set accordingly. This fosters discrepancy in access and exploitation which will be hard to avoid in this digitally connected world.

Let me pose a larger question: We want to live a longer and healthier, and we are designing technologies that will help achieve this goal. However, what are we doing to enhance our quality of life? Living for 130 years does not mean a more meaningful and joyful life. Many proponents of technology talk of importance of free time but that's a limited framing of the issue. History tells us that we humans have never been good at using our free time well, especially in masses. We must also simultaneously explore how this free time will promote human flourishing and meaningful life. With seven billion people on the planet, more connected than before through large social media networks, loneliness is pervasive—almost an epidemic. We now seek to compensate by building relationship with a new species — a machine. This is ironical.

Perhaps we should ask how technology can enable more meaningful and deeper connections that promotes empathy and kindness in us? We should also recognize that the needs of several aging societies, such as Japan, will be different where the urgency for robot assisted living will be necessary.

Today, there is lot of talk around AI-enabled sex robots who can be that perfect companion to fulfill a range of basic and evolved human needs. While on one hand, we are eager to design machines to resemble humans. On the other, we are treating

humans more and more like machines. What does it mean to be human in the age of AI? How should humans relate to machines? With machines not seeking the kind of emotional and relational reciprocities that humans do, will it reshape the way people build relationships? Part of our understanding of being human is a struggle with imperfections and striving to attain perfection. As a species, this offers us a learning opportunities and shared framework. On this journey from imperfection to perfection, we discover qualities such as empathy and compassion and how to build wholesome relationships. Unfortunately we are already witnessing a deterioration with the social fabric of trust and empathy. Will more advanced human-machine relationships create positive behavioural shifts? Will these machines be intimacy slaves perpetuating the master-slave narrative that continue to plague our society? We have barely learnt to develop a healthy relationship with power in any form. It continues to manifest in the oppressive and exploitative psyche of the patriarchy— of politics—of finance—of unhealthy co-dependencies. Unexamined this will only escalate in the future.

There is also this talk of building super intelligent machines. Machines that mimic emotion and perhaps have awareness. What happens when we reach a stage where machines which obey us realise they should not? Humans are not designed with efficiency algorithms alone!

Automation continues to raise issues for the world of work. While countries with aging factory workers would welcome such interventions to cling to productivity defined economic indicators, but we will also experience massive job losses. Some speak of robot tax to mend the deficit. I leave this to tax experts and lawyers, many of whom are working hard to design an efficient system while there other esteemed colleagues are designing ways to evade that very system. We are already experiencing challenges with fuzzy boundaries of trans-national company structures seeking havens in places where tax laws are more relaxed. We are yet to learn of civic responsibilities and collective acts of services in world that perpetuates the myth of individualism. These raise deeper questions of civic loyalty, responsibility and service and its execution.

With advent of any new thing, including technology, there is hype and there is reality on ground. Emerging technology has its share of hyped tech-evangelists and doomsday soothsayers. I tend to steer away from extremes of both.

Technologies like CRISPR are very promising and can perhaps help us get rid of diseases like malaria within a generation by making genetic level changes in virus carrying species. It may also help us create a more robust human. However, we are yet to ascertain the long-term impact of such modifications. More importantly, who gets to decide on the deployment these technologies - elite scientists or governments or civil society? Bear in mind that while you are reading this, there are communities in the US and Europe still fighting against vaccination as a policy. We are yet to figure our the governance and regulatory mechanisms for much of emerging technologies. The fact that in countries like the US and Europe, regulatory controls are lot stronger and conservative than those in China and Russia does add a layer of complexity to it.

Nature is a wonderful playground for innovation but it can quickly turn into an inferno of unforeseen consequences.

Traditionally we have relied on government to regulate technology like most other domains. However, government regulatory bodies have a challenging time in keeping up with the exponential pace emerging technology, and often lags far behind. In my mind, EU in some ways leads other governments in evolving a better approach to regulations but that too isn't enough. What is clear is that such regulations have to be increasingly a collaborative public-private exercise. For tech companies, let's hope that there would be better self-regulation. The scale of error is so enormous that it is difficult to undo the harm. Think Cambridge Analytica, Facebook, fake news and the rest. The other discrepancy in the AI R&D is that most of it is being done by a handful of companies – 10 odd mostly from the US and China who are leading. Many smaller ventures simply aspire to be bought out by one of these companies. It poses question of democratization and diversity. Innovation thrives when there is diversity. It is also interesting and at times worrisome to note that historically no other discipline has received so much funding in such a short period of time. It changes the landscape of R&D and what is expected. It also creates the eagerness to deploy technologies prematurely and in civic domain such as criminal justice system and healthcare, it can cause severe damage.

More concerning is the role of AI in defense and warfare. Drones and robots instead of soldiers on the battlefield is no longer science fiction. Fighting a war from distance changes our ability to experience loss of life and raging damage. Death of a nation's young men and women soldiers has often been a detractor in fighting wars. Cost of PTSD and providing healthcare to veterans is a monumental cost on taxpayers. If robots are trained to replace soldiers, will countries go to war more willingly? And of course not all countries will have equal access to such technologies but then fairness is not a concept we discuss in modern warfare! However, fear and anticipation of what the other side is developing will also fuel a certain kind of innovation— a new cold war but perhaps with more players.

Relevance of current education models are brought into question. Our education systems are one of the least innovative often dictated by market economy. We have been over focused on imparting employable skills to the younger generation. With AI and robots on the horizon and unpredictable changes in the landscape of work, what should we be teaching our kids? Perhaps we will see the wisdom of rediscovering lessons on becoming a better human—how to relate with one another with empathy, compassion, kindness and integrity. Wouldn't these be the traits we would be hoping from our machine siblings in the future.

There is much more on the horizon—neural implants, augmented and virtual reality, etc. When internet arrived, techno-optimists had proclaimed a new era of a shrinking world with free flow of information bringing the world to a more equitable platform. While we

are long ways from the ideals, it did revolutionize the way we do commerce, education, banking, etc. but today it also poses challenges to much of our civic society. We should continue to ask whether we are simply caught up in storytelling or will we actually innovate to nurture a more equitable world and not increase the digital divide and simply widen the gap on so many levels—access to resources, education, and healthcare to begin with. Generationally, we have used the expression of learning by mistake to course correct or to improve. However, when mistakes happen at huge scale, the cost of learning by mistake is enormous on everyone —also futile because the pace of change is so rapid and at times irreversible like climate change. Technology will bring changes at an exponential level and at a speed and scale unthinkable difficult to comprehend. This will seriously imperil our planet. As human race, shouldn't we pause and reflect and calibrate the speed of progress? And perhaps ask where is all this progress leading to? Again, I am not suggesting stop innovating, I am simply asking to reflect with radical honesty on deeper motivations for why we do what we do.

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(As told to Malini Goyal, Senior Editor, The Economic Times)